AXIS 213 PTZ Network Camera

User's Manual

About This Document

This manual is intended for administrators and users of the AXIS 213 PTZ Network Camera, and is applicable for software release 4.12. Previous experience of networking will be of use when installing and using this product. Some knowledge of UNIX or Linux-based systems would also be beneficial, for developing shell scripts and applications. Later versions of this document will be posted to the Axis Website, as required. See also the product's online help, available via the Web-based interface.

Safety Notices Used In This Manual

Caution! - Indicates a potential hazard that can damage the product.
Important! - Indicates a hazard that can seriously impair operation.
Do not proceed beyond any of the above notices until you have fully understood the implications.

Intellectual Property Rights

Axis AB has intellectual property rights relating to technology embodied in the product described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the patents listed at http://www.axis.com/patent.htm and one or more additional patents or pending patent applications in the US and other countries.
This product contains source code copyright Apple Computer, Inc., under the terms of Apple Public Source License 2.0. See third party license agreement in the About page.

Legal Considerations

Camera surveillance can be prohibited by laws that vary from country to country. Check the laws in your local region before using this product for surveillance purposes.

Electromagnetic Compatibility (EMC)

USA – This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class B computing device pursuant to Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference. Shielded cables should be used with this unit to ensure compliance with the Class B limits.

Canada – This Class B digital apparatus complies with Canadian ICES-003.

Europe CE – This digital equipment fulfills the requirements for radiated emission according to limit B of EN55022:1998, and the requirements for immunity according to EN55024:1998 residential, commercial, and light industry.

Japan – This is a class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

Australia – This electronic device meets the requirements of the Radio communications (Electromagnetic Compatibility) Standard 1998 AS/NZS 3548.

Liability

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Axis Customer Services

Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:
- download user documentation and firmware updates
- find answers to resolved problems in the FAQ database. Search by product, category, or phrases
- report problems to Axis support staff by logging in to your private support area
- visit the Axis Support Web at www.axis.com/techsup/

Safety Notice - Battery Replacement

The AXIS 213 uses a 3.0V CR2032 Lithium battery as the power supply for its internal real-time clock (RTC). This battery will, under normal conditions, last for a minimum of 5 years. Low battery power affects the operation of the RTC, causing it to reset at every power-up. A log message will appear when battery replacement is required.
The battery should not be replaced unless required!
If the battery does need replacing, please observe the following points:
Caution!
- Danger of Explosion if battery is incorrectly replaced
- Replace only with the same or equivalent battery, as recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

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Product Description

The AXIS 213 is a full-featured PTZ Network Camera for security surveillance and remote monitoring needs. The images from the cameras are made available on the network as real-time, full frame rate Motion JPEG streams and/or MPEG-4 video streams. The AXIS 213 also has an infrared (IR) lamp and a removable IR filter so it can operate day and night.

The AXIS 213 can optionally be equipped with a connection module with 2 inputs and 3 outputs, which can be connected to external devices, e.g. door sensors. The connection module has an audio in and an audio out port to support two-way audio.

Video can be viewed in 5 resolutions (up to 768x576). Up to 20 viewers can access a camera simultaneously when using Motion JPEG. If MPEG-4 multicast is used, the number of viewers is unlimited, but each viewer needs a separate MPEG-4 license. One license is included and additional licenses can be purchased separately.

The AXIS 213 contains advanced scheduling tools which can be used to trigger an event. As the AXIS 213 is designed for use in security systems, it is equipped with security features, such as IP address filtering and multilevel password. The AXIS 213 has a built-in Web server, providing full access to all features through the use of a standard Web browser. The built-in script tool allows basic applications to be created, providing basic surveillance solutions. For advanced functionality, the AXIS 213 is easy to integrate through the use of AXIS HTTP API. For more information, refer to http://www.axis.com/developer

Hardware Inventory

Check the items supplied with your AXIS 213 against the following list:

Item	Title/Variants
PTZ Network Camera	AXIS 213
Indoor Power Adaptor with power cable	Europe UK Australia USA/Japan Korea
Printed Document	AXIS 213 Installation Guide
Warranty Document	
CD	CD containing complimentary software and the AXIS 213 User's Manual
Optional Accessories	
Connection Module (Audio)	

The power adaptor is country specific, please check that the type you are using is correct.

AXIS 213 PTZ Network Camera

① **IR Light** - infrared light for night vision. Activated from the AXIS 213 web page.

② **Network Indicator** - the multi-colored network indicator flashes as follows:

- **Amber** - flashes for activity on a 10 Mbit/s network
- **Green** - flashes for activity on a 100 Mbit/s network
- **Red** - flashes red for hardware error
- **None** - no connection or disabled by the administrator

③ **Network Connector** - The AXIS 213 connects to the network via a standard RJ45 connector. The AXIS 213 detects the speed of the local network segment (10BaseT/100BaseTX Ethernet).

④ **Output/Input Connector** - For connection of the connection module cable. See below for information.

⑤ **Power Connector** - For connection of the power adapter (included).

The **Reset Button** is located on the underside of the unit. This button is used to restore the factory default settings, as described in *Resetting to Factory Default Settings, on page 46* or to install the AXIS 213, see the Installation Guide for more information.

The **Serial Number** is located on the label on the underside of the unit.

Optional Accessory:
Connection Module - The connection module provides the physical interface to 3 relay outputs, 2 digital inputs, audio in/out, video in/out and the RS 232C Serial port. See *Connection Module*, on page 48 for more information.

Note: For information on installing the AXIS 213, please refer to the Installation Guide.

Installing the AXIS 213

Please observe the following before installing the AXIS 213.

- This product is designed for indoor use, or in locations where it is protected from rain and moisture. To operate the camera in these conditions, use the outdoor housing accessories.
- Do not use strong or abrasive detergents when cleaning the casing. Use a mild detergent and wipe gently.
- Never position the camera directly towards the sun or other bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects.

Connecting the Hardware

Before you begin

If the AXIS 213 is to be mounted in a position where it is difficult to access, it is recommended that you set the IP address and get the camera up and running before completing the hardware installation, i.e. skip step 1 below until the installation is completely verified.

The AXIS 213 is supplied with a bracket for ceiling mounting.

1. Drill two holes in the ceiling and secure the bracket with the appropriate screws according to the ceiling material.
2. Connect a standard Ethernet cable to your AXIS 213 and connect it to the network.
3. Optionally, connect the Connection Module (not supplied) to the camera.
4. Connect the power cable.
5. The hardware installation is now complete, proceed to *Installing on a Network*, on page 9.

Note: If the AXIS 213 is to be placed upright on a desktop, remove the four screws on the underside of the unit to remove the bracket. Place the adhesive plastic feet by the screw holes.

Installing on a Network

The AXIS 213 is designed for installation on an Ethernet network. This involves assigning it an IP address, either manually or via an automated network service (DHCP). Select one of the following procedures depending on your network:

Available procedures:

Manual Installation using AXIS IP Utility (Windows)	on page 10
Manual Installation using ARP and Ping in Windows	on page 12
AXIS Internet Dynamic DNS Service	on page 13

Notes:

- The AXIS 213 has a default IP address - **192.168.0.90**
- DHCP is enabled by default
- The installation description is also available in German, French, Spanish and Italian in the AXIS 213 Installation Guide

AXIS Media Control (AMC)

AXIS Media Control (AMC) - an ActiveX component required for Microsoft Internet Explorer which is installed automatically on first use.

AMC must be installed for audio support and for viewing live images in Microsoft Internet Explorer. If your working environment restricts additional software components, you can configure your AXIS 213 to use a Java applet for updating the images (applies to video images, not audio). See the online help files under **Live View Config > Layout > Default Viewer** for Internet Explorer. Or use another supported Web browser. Once AMC is installed, the AMC viewer toolbar will display the audio controls and additional video controls.

Important!

- The camera employs MPEG-4 compression, which is technology licensed by the MPEG Consortium. One viewer license is included with the product. The installation of more than 1 instance of the viewer requires you to purchase further licenses. Please contact your Axis reseller.
- To allow the installation of the AXIS Media Control on your workstation, you must have administrator privileges. Your browser must also be set to allow the installation of signed ActiveX controls. This is the default setting in Internet Explorer.

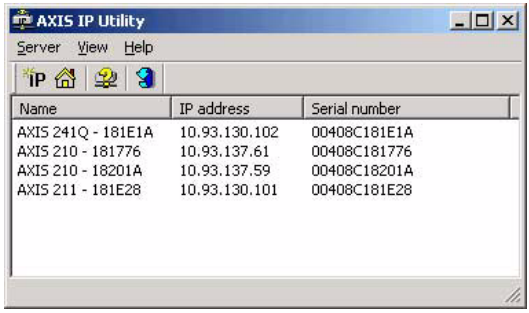
Manual Installation using AXIS IP Utility

AXIS IP Utility is a free Windows application that discovers and displays Axis devices on your network.

The application can also be used to manually set a static IP address.

Note that you must install the network camera on the same network segment (physical subnet) as the computer running AXIS IP Utility.

AXIS IP Utility is available on the CD supplied with this product, or it can be downloaded from www.axis.com/techsup



Automatic discovery

1. Check that the network camera is connected to the network and that power has been applied.
2. Start AXIS IP Utility. When the network camera appears in the window, double-click it to open the camera's home page.
3. When accessing the AXIS 213 for the first time, the '**Configure Root Password**' dialog will be displayed on the screen.
4. Enter a password and then re-enter it, to confirm the spelling. Click **OK**.
5. The '**Enter Network Password**' dialog will appear. Enter the User name: **root** **Note:** The default administrator user name **root** is permanent and cannot be deleted.
6. Enter the password as set in step 4 above, and click **OK**. If the password is lost, the AXIS 213 must be reset to the factory default settings.

Set the IP address manually

1. Acquire an unused IP address for the AXIS 213 from your network administrator that is on the same network segment your computer is connected to.

2. Click the button (Set IP address using serial number) and enter the serial number and IP address for the network camera. The serial number (S/N) is located on the camera's underside label.
3. Click the **Set IP** button and then restart the network camera (within 2 minutes).
4. Click **View Home Page** to access the network camera's web pages.
5. See above for instructions on how to set the password.

Note: AXIS IP Utility can be used to change a dynamically set IP address to a static one.

UPnP™

UPnP™ functionality is enabled by default in the AXIS 213. If also enabled on your computer (Windows ME or XP), the network camera will automatically be detected and a new icon will be added to "My Network Places." Click this icon to access the network camera.

See *Manual Installation using AXIS IP Utility*, on page 10 for instructions on how to set the password.

Note:

To install the UPnP™ service on your computer, open the Control Panel from the **Start Menu** and select **Add/Remove Programs**. Select **Add/Remove Windows Components** and open the **Networking Services** section. Click **Details** and then select **UPnP** as the service to add.

UPnP™ is a certification mark of the UPnP™ Implementers Corporation.

Manual Installation using ARP and Ping

1. Acquire an unused IP address for the AXIS 213 from your network administrator that is on the same network segment your computer is connected to.
2. Locate the serial number (S/N) on the camera's underside label.
3. Open a Command Prompt on your computer. As appropriate for your operating system, enter the following commands:

Windows syntax:	Windows example:
`arp -s <IP Address> <Serial Number>` `ping -l 408 -t <IP Address>`	`arp -s 192.168.0.125 00-40-8c-18-10-00` `ping -l 408 -t 192.168.0.125`
UNIX/Linux/Mac syntax:	UNIX/Linux/Mac example:
`arp -s <IP Address> <Serial Number> temp` `ping -s 408 <IP Address>`	`arp -s 192.168.0.125 00:40:8c:18:10:00 temp` `ping -s 408 192.168.0.125`

4. Check that the network cable is connected. Start/restart the AXIS 213 by disconnecting and reconnecting power, which must be done within 2 minutes of entering the ARP command.
5. Close the Command prompt when you see 'Reply from 192.168.0.125: ...' or similar.
6. Start your browser, type in http://<IP address> in the Location/Address field and press **Enter** on your keyboard.
7. See *Manual Installation using AXIS IP Utility*, on page 10 for instructions on how to set the password.

Notes:
- To open a command prompt in Windows: from the Start menu, select Run... and type cmd (or command in Windows 98/ME). Click OK.
- To use the ARP command on a Mac OS X, use the Terminal utility, which is found under Application > Utilities.

The AXIS Internet Dynamic DNS Service

The AXIS Internet Dynamic DNS Service is a free service provided by Axis. This service allows you to quickly and simply install your camera, which then receives a static name (DNS name) and a dynamic IP address. More information about the AXIS Internet Dynamic DNS Service is available at www.axiscam.net

To perform this procedure, your network should have an Internet connection with no HTTP proxy, and IP addresses should preferably be assigned via DHCP.

Follow these instructions:

1. After making the connections for network and power, wait for the Status indicator on the front of the camera to show a steady green.
2. Press the Reset button on the underside of the camera **once**. The Status indicator flashes green while it connects to the AXIS Internet Dynamic DNS Service.
3. Wait for the Status indicator to go back to showing a steady green.
4. To complete the installation, now visit **www.axiscam.net** from an Internet connected computer. This must be done within 60 minutes of pressing the Reset button.
5. Follow the on-screen instructions provided by the AXIS Internet Dynamic DNS Service. You will need the product's serial number to complete the installation. See *Manual Installation using AXIS IP Utility*, on page 10 for instructions on how to set the password.

Important!

> Please note that this procedure will send the IP address, firmware version, product type, serial number and HTTP port number of the network camera to the AXIS Internet Dynamic DNS Service.
> **No** personal information is transferred.

To remove the DNS name and unregister from this service, open the Setup pages in the network camera, click **System Options > Network > TCP/IP > Basic**, click the **Settings** button for the AXIS Internet Dynamic DNS Service and finally, click the **Remove** button.

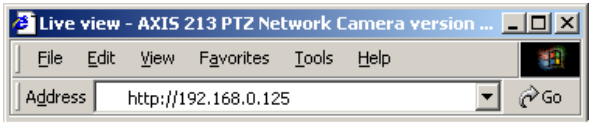
Using the AXIS 213

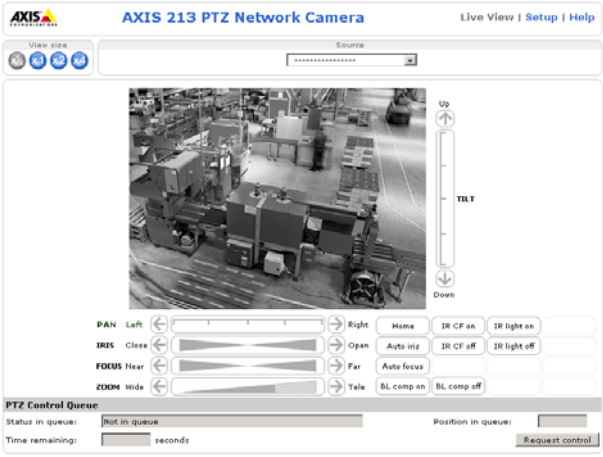
The AXIS 213 can be used with most standard operating systems and supports Microsoft Internet Explorer 5.x or later, Netscape 7.x or later and Mozilla 1.4 or later.

Note: To be able to view streaming video in Microsoft Internet Explorer, you must set your Web browser to allow ActiveX controls and also allow that AXIS Media control (AMC) is installed on your workstation. AMC is required to view MPEG-4 and listen to audio. If your workstation restricts the use of additional software components, the cameras can be configured to use a Java applet for updating JPEG images. For more information, see *AXIS Media Control (AMC)*, on page 9.

Accessing the AXIS 213

1. Start a browser (Internet Explorer, Mozilla, Netscape Navigator).
2. Enter the IP address or host name of the AXIS 213 in the **Location/ Address** field of your Web browser.
3. Enter the user name and password set by the administrator.
4. A video image is displayed in your browser.




AXIS 213 PTZ Network Camera
Live View | Setup | Help
View size
Source
Up
TILT
Down
PAN Left Right Home IR CF on IR light on
IRIS Close Open Auto iris IR CF off IR light off
FOCUS Near Far Auto focus
ZOOM Wide Tele BL comp on BL comp off
PTZ Control Queue
Status in queue: Not in queue
Position in queue:
Time remaining: seconds
Request control

Notes:

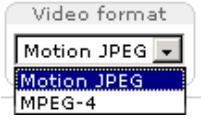
User functions in the AXIS 213 may have been customized to meet the specific requirements of the application. Consequently, many of the examples and functions in this section may differ from those displayed in your Live View page.

If the AXIS 213 is to be placed upright on a desktop, the image must be rotated. Go to **Setup > Video & Image** and set **Rotate image** to 180 degrees.

Live View

The following provides an overview of each button on the Live View page. If the AXIS 213 has been customized, the buttons will be displayed accordingly:

To resize the displayed image, click the **View Size** buttons: half-size (x1/2), full-size (x1), x2 or x4. This will not change the resolution of the image (not available in Sequence Mode).



From the Video Format list, select the desired video stream format. Note that Multicast must be enabled if MPEG-4 is selected. This is configured under Setup > System Options > Network > RTP (multicast).

The **Output buttons** control an output directly from the **Live View** page. These buttons are configured under **Setup > Live View Config > Layout**.

Pulse - click this button to activate the port for a defined period of time, e.g. to switch on a light for 20 seconds.
Active/Inactive - click these buttons to manually start and stop a connected device, e.g. switch a light on/off.

These buttons start/stop the **Sequence Mode**. This mode is created in **Setup > Live View Config > Sequence mode** and automatically displays the view from preset positions at set intervals.

The **Action buttons** trigger an action directly from the **Live View** page. These buttons are configured under **Setup > Live View Config > Layout**. Click these buttons to manually start and stop events.

Use the **Snapshot** button to capture a snapshot of the image currently being displayed in the window. Right-click on the image to save it in JPEG format on your computer.

The **AMC viewer toolbar** is available in **Microsoft Internet Explorer only.** See *AXIS Media Control (AMC)*, on page 9 for more information. The AMC viewer toolbar displays the following buttons:

The **Play/Stop** buttons start and stop the live video stream.

The **Snapshot** button takes a snapshot of the currently displayed image. The Snapshot function and the target directory for saving snapshots can be configured from AMC (AXIS Media Control), which is available from the Windows Control Panel (Internet Explorer only).

Click the **View Full Screen** button and the video image will fill the entire screen area. No other windows will be visible. Press **Esc** (Escape) on the computer keyboard to cancel full screen view.

Click the **Mute /Microphone** buttons to switch the sound off and on. Only available if Audio is enabled and the Connection Module with a loudspeaker/microphone is connected.

Use the sliders to control the volume on the speaker and microphone. The volume can be set between 0 and 100. The Buffer slider controls the size of the buffer for audio. A higher level will reduce audio break-up, but may introduce a noticeable lag in audio transmission. There are four settings i.e. min, low, high and max.

The Live View page also displays the **Pan/Tilt/Zoom controls**.

The controls can be disabled/enabled for specified users by the administrator under **System Options > Security > Users > User List**

Clicking this box will move the AXIS 213 to a preset position called “Home”.

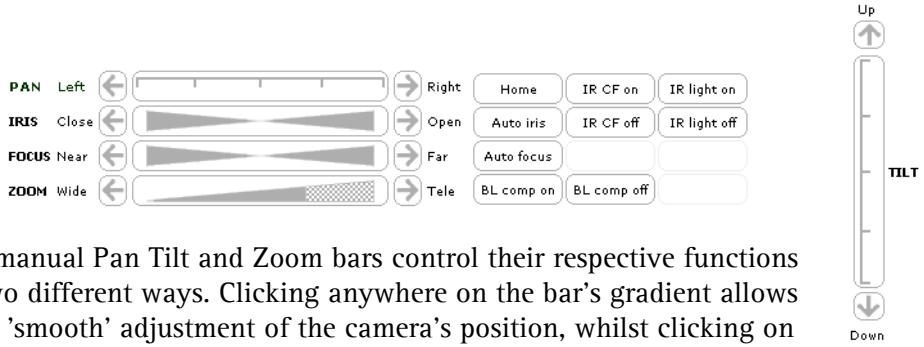
The backlight compensation makes the subject appear clearer against e.g. a bright background.

Turn the IR light on the front of the AXIS 213 to see objects in the dark.

When the IR cut filter is set to off, the camera will be able to ‘see’ infrared light, e.g. at night, thus making the image clearer. The image is shown in black & white when the IR cut filter is off.

The iris can automatically adjust the amount of light reaching the camera and give the best results, as well as protecting the image sensor from strong light.

Set the AXIS 213 to automatically adjust the image focus.



The manual Pan Tilt and Zoom bars control their respective functions in two different ways. Clicking anywhere on the bar's gradient allows for a 'smooth' adjustment of the camera's position, whilst clicking on the arrows at the two ends of the bar cause a stepped, incremental change.

Note: Setting the iris and focus manually will disable automatic iris (**Auto iris**) and focus (**Auto focus**).

Click-in-image

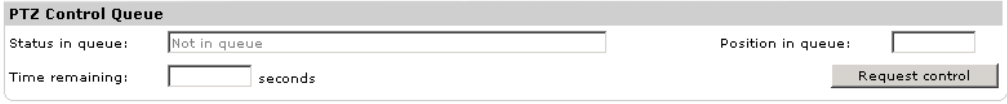
The PTZ device can also be controlled using **click-in-image** movement, which can also be of relative or absolute type. Choose **Relative** or **Absolute** from the dropdown list on the Live View page.

Absolute click-in-image movement means that the camera view will center on the absolute position that was clicked.

Relative click-in-image movement can be used when using the AXIS Media Control with Microsoft Internet Explorer. By clicking and holding the mouse button down in the image, the PTZ device moves the camera in that direction, relative to the center of the image. The further from the center the image is clicked, the greater the movement.

Pan/Tilt/Zoom Control Queue

Only one user can use the Pan/Tilt/Zoom controls at any time. So when multiple clients access the AXIS 213's Live View page, it is necessary to queue the users and restrict the length of time they are in control of the Pan/Tilt/Zoom controls. Use the buttons to request or release control of the Pan/Tilt/Zoom controls.



The Pan/Tilt/Zoom Control Queue is set up by the administrator under **PTZ Configuration > Advanced > PTZ Control Queue**.

Configuring the AXIS 213

This section describes how to configure the AXIS 213 and is intended for the **administrator**, who has unrestricted access to all Setup tools, and **the Operator**, who has access to Video & Image, Live View Config and Event Configuration. See the section on *Security*, on page 40 for more information on user access control.

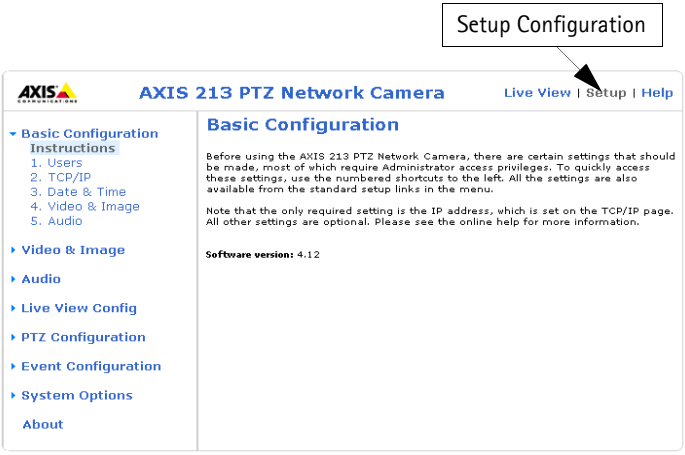
The AXIS 213 is configured under **Setup** from a standard browser.

Accessing the Setup Tools

Follow the instructions below to access the Setup Tools from a browser.

1. Start the browser and enter the IP address or host name of the AXIS 213 in the location/address field.

2. The **Live View** page is now displayed. Click **Setup** to display the **Setup** configuration tools.


Setup Configuration
AXIS 213 PTZ Network Camera
Live View | Setup | Help
Basic Configuration
Instructions
1. Users
2. TCP/IP
3. Date & Time
4. Video & Image
5. Audio
Video & Image
Audio
Live View Config
PTZ Configuration
Event Configuration
System Options
About
Basic Configuration
Before using the AXIS 213 PTZ Network Camera, there are certain settings that should be made, most of which require Administrator access privileges. To quickly access these settings, use the numbered shortcuts to the left. All the settings are also available from the standard setup links in the menu.
Note that the only required setting is the IP address, which is set on the TCP/IP page. All other settings are optional. Please see the online help for more information.
Software version: 4.12

Overview of the Setup Tools

Basic Configuration - the links under Basic Configuration are shortcuts to the necessary basic settings the first time the unit is configured.

Tools	Settings / Options / Description
Instructions	General Instructions
Users	See **System Options > Security > Users** below
TCP/IP	See **System Options > Network > TCP/IP** below
Date & Time	See **System Options > Date & Time** below
Video & Image	See **Video & Image** below
Audio	See **Audio Settings** below

Video & Image (Administrator/Operator)

Tools	Settings / Options / Description	
Image	Image Settings	Basic image settings; Resolution, compression, color settings, rotate image. Overlay settings places an overlay in the video image. Video stream - setting to limit the video stream display time.
Overlay Image	An overlay image is added to the video image.	
Advanced	Camera	Settings for white balance, exposure control, shutter speed, night vision and backlight compensation. Settings for auto focus and noise reduction.
	MPEG-4	Settings for profile@level, GOV structure and length. Note that changing these settings may affect the amount of bandwidth required for the video stream.

Audio (Administrator/Operator)

Tools	Settings / Options / Description
Audio Settings	Enable audio. Audio channels - settings for audio mode and maximum number of clients. Settings for audio input and output gain.
Advanced Audio	Settings to improve sound quality, e.g. speech filter and echo cancellation.

Live View Config (Administrator/Operator)

Tools	Settings / Options / Description
Layout	Customize the features, add custom links, manual trigger buttons, IR light button, IR cut filter button and manual output control buttons to the Live View page. Set the default video format in the Live View page, choose between **Motion JPEG** and **MPEG-4**. Default Viewer: set your preferred method of viewing moving images.
HTML Examples	Add live video from the AXIS 213 to your own Web site or save an HTML page on your local hard disk to display live images from the AXIS 213.

PTZ Configuration (Administrator/Operator)

Tools	Settings / Options / Description
Preset Positions	Define and save preset positions for quick access to certain camera views.
Sequence Mode	'Guard Tour' where the AXIS 213 can rotate through the preset positions in a set order or randomly.
Limits	Set Pan/Tilt/Zoom and Focus limits to restrict the viewing areas. Set the speed for camera movement.
Advanced	Pan/Tilt/Zoom control queue settings.

Event Configuration (Administrator/Operator)

Tools	Settings / Options / Description
Instructions	General Instructions
Event Servers	Specify destinations for uploaded image files and/or notification messages from the AXIS 213. FTP servers and HTTP servers are intended for saving image files and HTTP servers and TCP servers are intended for receiving notification messages.
Event Types	Set the AXIS 213 to act on Triggered or Scheduled Event Types, e.g. to upload images to a specified destination when an alarm is activated or at a set time.
Port Status	Shows the status for the inputs and outputs connected to the AXIS 213 - see **Ports & Devices** under **System Options**.

System Options (Administrator)

Tools	Settings / Options / Description	
Security	Users	Access to the AXIS 213 can be restricted to defined users only (maximum of 20). The administrator has unrestricted access to the Setup tools and determines rights for users at 3 levels; Administrator, Operator, Viewer.
	IP Address Filter	Once enabled, only the IP addresses shown in the list of allowed addresses will be permitted to access the AXIS 213. All others will be blocked.
Date & Time	Define the date and time settings for the AXIS 213, manually or automatically.	
Network	TCP/IP	Specify IP address configuration, DNS configuration, Host Name configuration, Notification of changed IP address. Register/unregister for AXIS Internet Dynamic DNS Service. Specify HTTP port and network traffic preferences.
	SOCKS	Specify SOCKS server to use when communicating with hosts on the other side of a firewall/proxy server.
	SMTP (email)	Specify the host names or addresses for your primary and secondary mail servers in the fields provided to allow the AXIS 213 to send event and error email messages to predefined email addresses.
	UPnP	The Network PTZ Camera includes support for UPnP™. Enable UPnP (enabled by default) and enter a user friendly name for the AXIS 213.
	RTP (multicast)	Enable/disable multicast and specify multicast addresses. Only applicable when MPEG-4 is used as the video format.
Ports & Devices	I/O Ports	Configure the 2 digital inputs and 3 relay outputs supported by the AXIS 213.
LED settings	Set the behavior of the LED on the front of the AXIS 213.	
Maintenance	Maintenance functions to restart the AXIS 213, restore settings, upgrade the firmware, backup the parameters and restore to previous settings.	

Tools	Settings / Options / Description	
Support	Support Overview	Troubleshooting guide, generate server report (always attach the Server Report when contacting your support channel). Axis Support Services information.
	Logs & Reports	Generate Logs (all log information is shown in one file), Reports (important information about the server's status) and a parameter list (the unit's parameters and current settings).
Advanced	Scripting	This powerful function allows users to customize and use their own scripts to create specialized applications.
	Plain Config	Plain config allows direct access to all the configurable parameters.

About (Administrator)

Tools	Settings / Options / Description
About	Third Party Software Licenses - Contains information about third party licenses and where to get source code.

Using the Setup Tools

The following descriptions offer examples of the available features in the AXIS 213. For details of each setting, please refer to the online help files which are available from each page. Click to access the help files.

Video & Image

To optimize the video images to your requirements, modify the following settings under **Image Appearance**:

- Resolution
- Compression
- Rotate Image
- Color Setting
- Brightness

Note: All configuration of images and overlays will affect the performance of the AXIS 213, depending on the usage and the available bandwidth. Please keep in mind the following when changing the image settings:

- Lower compression improves image quality, but generates larger files
- Color uses more bandwidth than Black & White
- Rotating the image 90 or 270 degrees will lower the maximum frame rate
- When using MPEG-4 as the video format, the compression setting will define the minimum compression level. The compression level will temporarily increase as and when required, i.e. when the bit rate approaches the maximum value as defined in the current profile@level combination.

You may need to press the **Stop** and **Play** buttons on the Live View page before the settings take effect.

Overlay Settings

Include an image and date and time with your own text which is placed on one line at the top or bottom of the video image.

See *Overlay Image Settings*, on page 22 for instructions on how to upload an overlay image to the AXIS 213.

Video Stream

Define the maximum **video stream time** per session in seconds, minutes or hours. When the set time has expired, a new stream can be started by refreshing the page in the browser.

Define the maximum **frame rate** (fps - frames per second) allowed for each viewer, to avoid bandwidth problems on the network.

Test - For a preview of the image and overlay settings before saving, click **Test**. The Brightness setting does not affect the Test image. When satisfied with the settings, click Save. Please note that the preview image will be in JPEG format, even though the settings are valid both for Motion JPEG and MPEG-4.

Overlay Image Settings

An overlay image is an image included in the video image. This might, for example, be your own company logo. Follow these instructions to upload and use an overlay image:

1. Go to **Setup > Video & Image > Overlay Image**.
2. To upload the image to the AXIS 213, click the **Browse** button and locate it on your computer or server.
3. Click the **Upload** button and follow the on-screen instructions.
4. The image is now available in the **Use overlay image** drop-down list.
5. Click **Save**.

6. Go to **Setup > Video & Image** and modify the parameters under **Overlay Settings**.

Overlay image requirements:

Image Formats	Image Size
• Windows 24-bit BMP (full color) • Windows 4-bit BMP (16 colors)	The height and width of the overlay image in pixels must be exactly divisible by 4.

Overlay image limitations:

- If the image overlay and text overlay are larger than the video image, no overlay will be displayed. When also using a text overlay, this will occupy 16 pixels in height and as many in width as the video image. Please consider this when configuring the overlay image.
- If the overlay is initially positioned so that part of it is outside the video image, it will be relocated so that it appears over the video image, i.e. the entire image is always displayed.
- The maximum overlay image size supported by the AXIS 213 is the same as the maximum image resolution. See Technical Specifications, on page 46.

Please use the online help files for more information.

Advanced

Camera - To optimize the lighting settings according to your requirements, modify the following settings under **Lighting Conditions**:

- White balance - the white balancing system in the AXIS 213 can automatically detect white in the image and intelligently use this as a reference for other colors.
- Exposure control - this setting is used to adapt to the amount/type of light being used. If set to **Manual**, select the desired **Shutter speed** from the drop-down list.
- IR cut filter - turn the IR filter on or off. To light up the IR lamp on the front of the AXIS 213, turn the IR cut filter **Off** and click **Save**. The **Set IR Lamp** buttons will appear. The lamp will automatically switch off after 8 hours.
- Backlight compensation - this setting is used to make the subject appear clearer against e.g. a bright background.

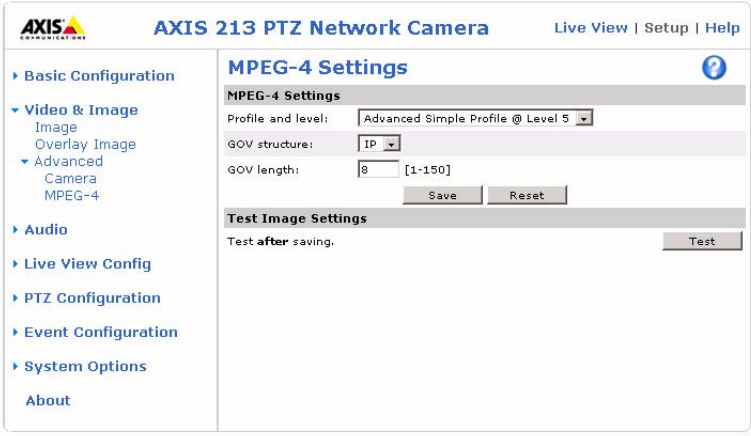
Notes: • If configured by the administrator under **Live View Config > Layout > IR Buttons** the viewer is able to switch the IR lamp and IR filter on and off, directly from the Live View page.

• In certain situations, the white balancing system will not operate effectively. Problems may occur if the image contains no white color at all, or if the dominant color is not white. In these circumstances, the white balance may incorrectly be based on another visible color in the image, and colors may become distorted. A pale background picture with reddish or blue foreground objects is very symptomatic of this condition. In such cases it is recommended that a fixed white balance setting is selected.

Image Settings

- Auto focus enabled (default setting)
- Noise reduction - sets the level of noise reduction in the image. i.e. sharpens the image. Setting the noise reduction to 'high' will cause a drop in frame rate (fps). Please see the online help for more information.

MPEG-4 Settings



The AXIS 213 supports the following different MPEG-4 profiles and levels:

Profile@Level	Properties
Advanced Simple Profile @ Level 3	Max bit rate = 768 kbit/s ISMA compliant
Advanced Simple Profile @ Level 5	Max Bit rate = 8 Mbit/s

Level 5 is preferred if there is enough bandwidth available, as the image quality of the video stream will be better than if level 3 is used. The viewing client must support the profile used for the video stream otherwise the MPEG-4 stream can not be viewed.

Note: The Axis Media Control supports all the configuration possibilities available on this page.

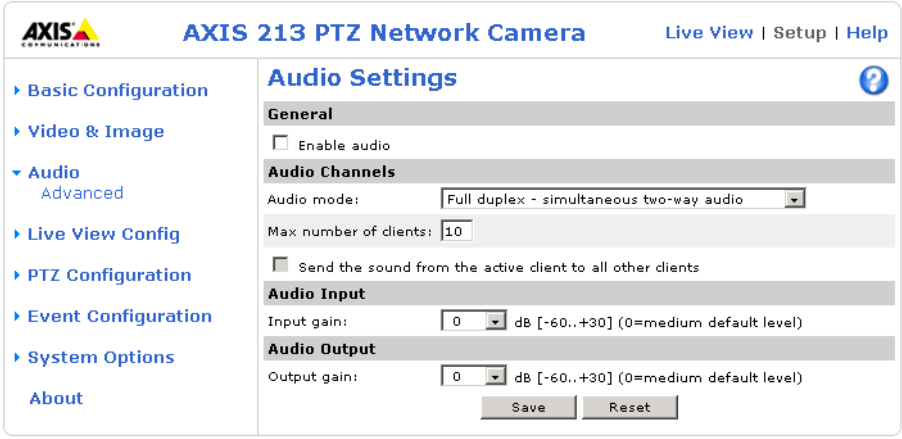
The **GOV structure** can be set to either **I** or **IP**, which describes the type of images included in the video stream, as well as their internal order. The IP-structure generally sends the differences compared to the previous image and far fewer complete images, so this method uses much less bandwidth than the I-structure. The I-structure gives higher frame rates when using a high resolution, but requires more bandwidth.

The **GOV length** determines the sum total of P-images and I-images in a GOV. Setting the GOV length to a high value saves considerably on bandwidth. However there may be noticeable decay in the image at high values.

Note: GOV = Group of VOPs
VOP = Video Object Plane
Video Object Plane = image

Audio Settings

This section describes how to configure the basic audio settings for the AXIS 213, e.g. set the communication mode and adjust the sound levels in the microphone and speaker connected to the connection module.



General

Enable audio transmission to and from the AXIS 213's connection module.

Audio Channels

There are two audio channels between the AXIS 213 and other clients, one for receiving audio and one for transmitting audio. Each audio channel can be turned on or off, which means that there are four options for **audio mode** that can be used.

Full-duplex mode means that you can transmit and receive audio (talk and listen) at the same time, without having to use any of the controls. This is just like having a telephone conversation. The only controls you may wish to use are the mute buttons to turn off the sound, and the sliders, to adjust the input/output volume levels. This mode requires that the client PC has a sound card with support for full-duplex audio. If your available bandwidth is 0.2 Mbit/s or less, it is recommended that you use **Half-duplex** mode instead.

Half-duplex mode also transmits and receives audio in both directions, but only in one direction at a time. This means that you must select when to receive or transmit audio with the help of the push-to-talk button. To speak, press and hold the button (check that the microphone is not muted). When finished speaking, release the button. You will now be receiving audio from the other end of the connection.

Note that the push-to-talk button is configured from AMC, see *AXIS Media Control (AMC)*, on page 9. It is also possible to configure the Push-to-talk button so that it toggles between speaking and listening modes. Half-Duplex mode is best if you only have limited bandwidth available.

When you select **Simplex - AXIS 213 speaker only** mode, the speaker connected to the AXIS 213's connection module will play audio, but no audio will be transmitted from the AXIS 213 to other web clients. This could be used to e.g. provide spoken instructions to a person seen in the network camera. This mode requires you to use the push to talk button.

Simplex - AXIS 213 microphone only mode transmits audio from the microphone connected to the AXIS 213's connection module to any web clients. It will not receive audio from any other web clients. This can be used in remote monitoring, web attractions etc., to provide live audio, as well as video, of a monitored situation.

The **max number of clients** allows you to restrict the number of clients accessing the **AXIS 213**. When using full-duplex mode, up to 10 clients can receive video and audio from the **AXIS 213**, but only one client can transmit audio. If your application requires audio to be transmitted and received from more than one PC client, consider using half-duplex mode instead.

When using half-duplex, the **Send the sound from the active client to all other clients** option transmits the audio signal from the client that is talking to all the other clients.

Audio Input

The optional connection module can be connected to the AXIS 213 to provide an audio input for a microphone. If there are problems with the sound input being too low or high, it is possible to adjust the input gain for the microphone connected to the connection module.

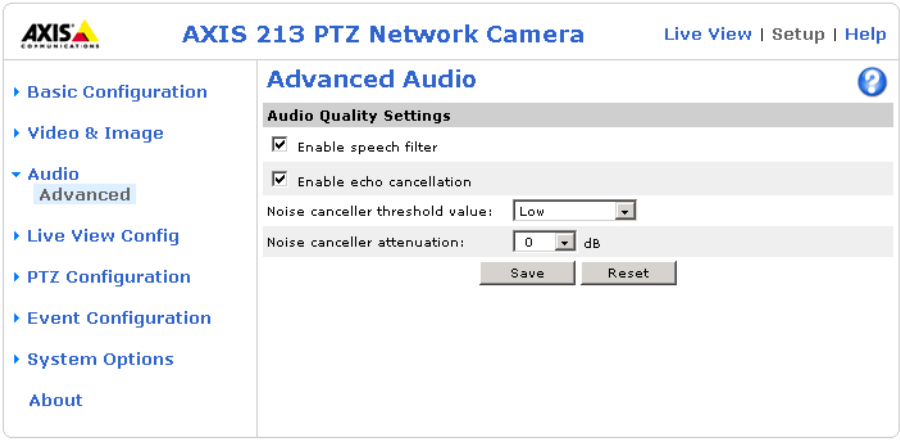
Audio Output

If the sound from the speaker is too low or high it is possible to adjust the **output gain** for the active speaker connected to the connection module.

When satisfied with the settings, click **Save**, or click **Reset** to revert to the previously saved settings.

Advanced Audio Settings

The **Advanced Audio** settings allows you to tune the external microphone connected to the AXIS 213's connection module to suit your environment.



Enable speech filter improves the sound quality when the microphone is placed close to the person talking and can also help reduce background noise. The filter cuts the lowest and the highest frequencies. The bypass frequency range is approximately 250Hz to 3700Hz (measured at -10dB cut-off break points).

Enable echo cancellation reduces acoustic echoing if sound from the speaker is captured by the microphone.

Noise canceling is a way of reducing the background noise when there is no useful audio present. A typical application could be that the camera is set up in a noisy environment, and you are only interested in hearing the sound from the AXIS 213 when someone is speaking close to the microphone. There are two adjustable parameters available to optimize this function:

- **Noise canceller threshold level**
- **Noise canceller attenuation**

When the incoming sound is louder than the threshold, it will pass without any changes. When lower than the threshold, the incoming sound will be reduced by a certain attenuation factor. The threshold level should be set higher than the background noise, but lower than the useful audio.

The **noise canceller threshold value** can be set to **High**, **Medium High**, **Medium low** and **Low**. A lower threshold will accept most of the audio to pass. Only the weakest background noise will be reduced. A higher threshold will make the noise canceller act on even stronger background noise. At the maximum level **High**, there is a risk of reducing useful audio as well.

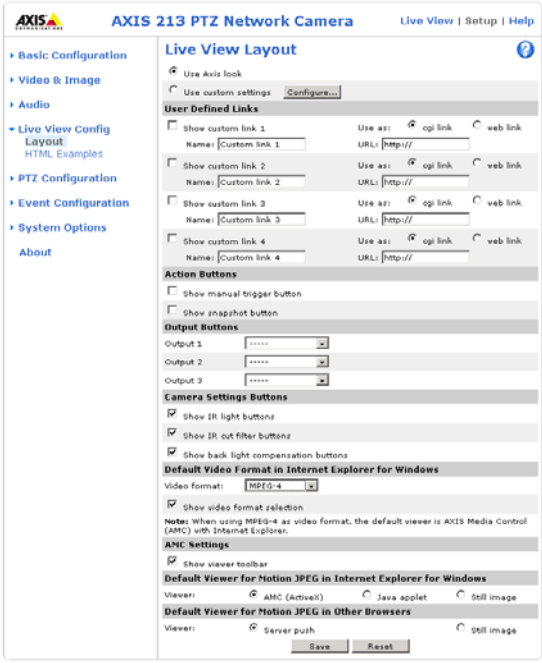
There is a trade-off between noise canceling and sound quality. In other words, increasing the **noise canceller attenuation** deteriorates sound quality. Adjust the threshold and the attenuation to an optimum by listening and changing the levels.

Live View Config – Live View Layout

These are the tools for deciding the layout of the Live View page.

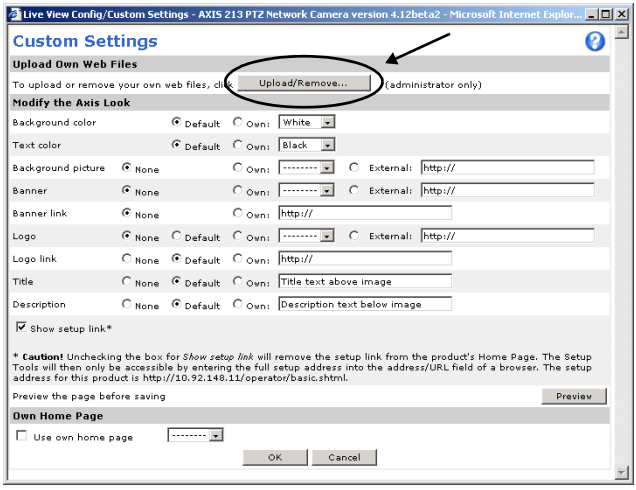
The layout can be set in 3 ways:

- Use Axis look - the layout is unchanged.
- Use custom settings - modify the default page with your own colors, images etc. Click the **Configure** button and see the following page.
- Own Home Page - Upload and use your own custom made page as the default web page. Click the **Configure** button and see the following page.



Customizing the default page

The appearance of the default AXIS 213 Live View page can be customized to suit your own requirements, or you can upload and use your own home page. To upload your own files, click the **Upload/Remove** button and see the description below.



Note that the setup address is http://<ip address>/operator/basic.shtml

Upload Own Web Files

Your own web files, background picture, color etc. must first be uploaded to the AXIS 213 in order to be available for selection in the **Custom Settings setup** dialog. Once uploaded, the files are shown in the drop-down list.

1. Enter the path to the file, e.g. a file located on your workstation or click the **Browse** button.
2. Select the user level for the uploaded file. Setting the user access level means that you have complete control over which pages can be viewed by which users.
3. When the path is shown correctly in the text field, click the **Upload** button.

All uploaded files are shown in the list in the lower section of the page. To remove a file, check the box provided next to it and then click the **Remove** button.

- To use your uploaded file, click the radio button and select the file from the drop-down list by **Own:**
- To use an external file located somewhere other than in the AXIS 213, click the radio button and enter the URL by **External:**

Own Home Page

To use a previously uploaded web page as the default page, check the checkbox, select the page from the drop-down list and click **OK**.

User Defined Links

Enter a descriptive name and enter the URL in the provided field. The link will appear on the **Live View** page.

User defined CGI links can be used to issue HTTP API requests, e.g. PTZ commands.

Example:

1. Check **Show Custom Link 1**
2. Enter a descriptive name, e.g. CAM START.

3. Select the **Use as cgi link** radio button and enter the cgi link in the field:

```
http://192.168.0.125/axis-cgi/com/ptz.cgi?continuouspantiltmove=-30,-30
```

4. Check **Show Custom Link 2.**
5. Enter a descriptive name, e.g. CAM STOP.
6. Select the **Use as cgi link** radio button and enter the cgi link in the field:

```
http://192.168.0.125/axis-cgi/com/ptz.cgi?continuouspantiltmove=0,0
```

7. These links will appear in the web interface and can be used to control the PTZ camera.

For more information on the Axis HTTP API, see the Support / Developer pages on the Axis Web site at http://www.axis.com

Action Buttons - These buttons can then be used to manually trigger and stop an event from the Live View page. See *Event Servers*, on page 36.
The snapshot button allows users to take a snapshot of the video stream and save it on a computer.

Output Buttons - These buttons can then be used to manually start and stop an event from the Live View page, e.g. switch a light on/off:

- The Pulse button activates the port for a defined period
- Active/Inactive displays 2 buttons, one for each action (on/off)

Camera Settings Buttons- Check the checkboxes for **Show IR light buttons** and **Show IR filter buttons** to enable buttons on live view page for switching the IR filter and IR lamp on and off.

Default Video Format in Internet Explorer for Windows - Select default video format from the dropdown list. Tick the box to enable video format selection on the Live View Page. When using MPEG-4 as video format, the default viewer is AXIS Media Control with Internet Explorer.

AMC Settings - Uncheck this box to remove the AMC (Axis Media Control) viewer toolbar under the image on the live view page.

Default Viewer for your Browser - select the appropriate radio button to define your method for viewing moving images depending on your Web browser and settings.

Please use the online help files for details.

HTML Examples

You can add live video from your AXIS 213 to your own web site. The AXIS 213 can send Motion-JPEG to up to 20 simultaneous connections, although an administrator can restrict this to fewer. If MPEG-4 is set as video format, multicasting is used and the video stream will be available for an unlimited number of viewers connected to the parts of the network where multicast is enabled. Please note that a separate MPEG-4 license is required for each viewer.

It is possible to select the **Image Type**, **Image size** and **Optional settings** to suit your Web page when using Motion JPEG.

Copy the source code as displayed on the HTML examples page and paste it into your own HTML code.

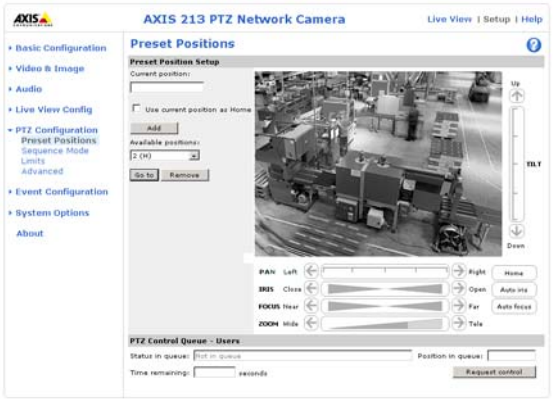
Please see the online help for more information.

PTZ Configuration - Preset Positions

A preset position is a pre-defined camera view than can quickly and easily be viewed.

From **Preset Position Setup**, use the Pan, Tilt and Zoom (PTZ) controls to steer the camera to the required position. When satisfied with the camera's position, enter a descriptive name. This camera position is then saved as a preset position.

The AXIS 213 will take the exact position when the preset's name is selected from the Preset positions drop-down list. Preset positions can be selected in **Live View**, from **events** and in **Sequence mode**.



One position can be set as the **Home** position, which is readily accessible by clicking on the **Home** button in both the Preset Position Setup window and the Live View window. The position's name will have (H) added, e.g. Office Entrance (H).

Sequence Mode

The Live View page can be configured to rotate through the selected preset positions, in a set order or randomly.

Select the desired preset positions and enter the time to display each position. Click **Save**.

The Sequence buttons will appear on the Live View page to enable the viewer to start and stop the sequence mode.

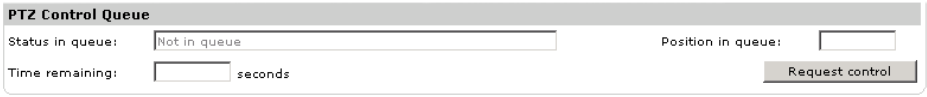
Limits

Define the **pan**, **tilt**, **zoom** and **focus** limits for the AXIS 213. Movements to the left and right, up and down can be restricted to narrow the area under surveillance.

Move speed sets the speed of the camera's Pan/Tilt movements. The default setting is maximum speed.

Advanced

PTZ Control Queue - The administrator can set up a queue for the PTZ controls. Once set up, the PTZ Control Queue buttons will appear on the Live View page offering one viewer exclusive control for a limited amount of time. Other users will be placed in the queue.



PTZ Control Queue on Live View page

Please see the online help for more information.

Event Configuration

This section describes how to configure the AXIS 213 for alarm and event handling. The AXIS 213 can be configured to perform certain actions when certain types of events occur.

Event Type	A set of parameters describing how and when the AXIS 213 is to perform certain actions	
Triggered Event page 37	the circumstances that start an event	e.g. at a signal from an external device, such as a door switch or a motion sensor
Scheduled Event page 39	the circumstances that start an event	e.g. at a pre-programmed time
Action	what occurs when the event triggers	e.g. uploaded video images to an FTP server, email notification, etc.

Event Servers

Event Servers are used, e.g. for receiving uploaded image files and/or notification messages. To set up Event server connections in your AXIS 213, go to **Setup > Event Configuration > Event Servers** and enter the required information according to the selected server type.

Server type	Purpose	Requires information
FTP Server	• used for uploading saved images	• Descriptive name of your choice • User Name and Password (to FTP server) • Upload path e.g. images/ • Port number • Use passive mode if there is a firewall between the PTZ camera and the FTP server
HTTP Server	• used for notification messages • used for uploading saved images	• Descriptive name of your choice • URL • User Name and Password (to HTTP server) • Proxy address/Proxy port (if required) • Proxy User Name and Password (if required)
TCP Server	• used for notification messages	• Descriptive name of your choice • User Name and Password (to TCP server) • Port number

For details on each setting, please refer to the online help files which are available from each web page.

Note: Pre-trigger and Post-trigger buffers will be lost if the connection to the event server fails.

When the setup is complete, the connection can be tested by clicking the **Test** button (the connection test will take approximately 10 seconds).

Event Types

An **Event Type** is a set of parameters describing how and when the AXIS 213 is to perform certain actions.

Example: If somebody passes in front of the camera and an event that uses motion detection has been configured to act on this, the camera can e.g. record and save images to an FTP server, and/or send a notification email to a pre-configured email address with a pre-configured message. Images can be sent as email attachments.

Triggered Event

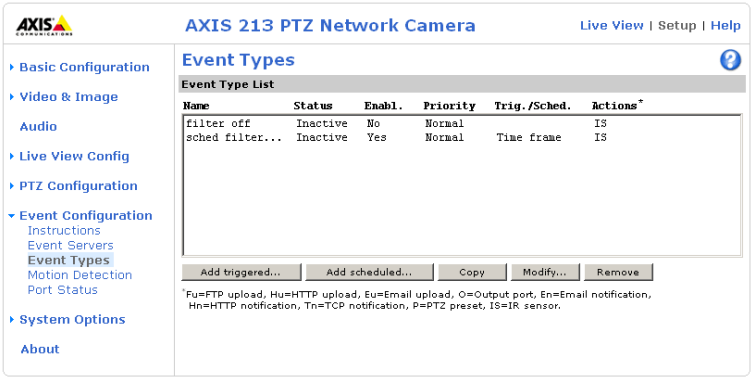
A Triggered event is activated from, e.g:

- a switch connected to an input port on the AXIS 213
- a manually activated action e.g. from an action button in the web interface
- on restart (reboot) after e.g. power loss

How to set up a triggered event

This example describes how to set the AXIS 213 to upload images when the main door is opened:

1. Click **Add triggered** on the **Event types** page.
2. Enter a descriptive **name** for the event, e.g. Main door.
3. Set the **Priority** - High, Normal or Low (see online help files).
4. Set the **Respond to Trigger...** parameters when the event is to be active, e.g. only after office hours
5. Select the trigger alternative from the **Triggered by...** drop-down list, e.g. an Input port with a connected sensor if the door is opened.
6. Set the **When Triggered...** parameters i.e. set what the AXIS 213 is to do if the main door is opened e.g. upload images to an FTP server.
7. Click **OK** to save the Event in the Event Types list.



Please use the online help files for descriptions of each available option.

Pre-trigger and Post-trigger buffers

This function is very useful when checking to see what happened immediately before and after a trigger, e.g. 2 minutes before and after a door has been opened. Check the **Upload images** checkbox under **Event Types > Add Triggered... > When Triggered...** to expand the web page with the available options.

Note: **Buffer size** - up to 9 MB buffer. The maximum length of time of the pre-/post-buffer depends on the image size and selected frame rate.

Include pre-trigger buffer - images stored internally in the server from the time immediately preceding the trigger. Check the box to enable the pre-trigger buffer, enter the desired length of time and specify the required image frequency.

Include post-trigger buffer - contains images from the time immediately after the trigger. Configure as for pre-trigger.

Note: If the pre- or post-buffer is too large for the internal memory, the frame rate will be reduced and individual images may be missing. If this occurs, an entry will be created in the unit's log file.

Continue image upload (unbuffered) - enable the upload of images for a fixed length of time. Specify the length of time for the uploaded recording, in seconds, minutes or hours, or for as long as the trigger is active. Finally, set the desired image frequency to the maximum (the maximum available) or to a specified frame rate. The frame rate will be the best possible, but might not be as high as specified, especially if uploading via a slow connection.

Scheduled Event

A **Scheduled event** can be activated at pre-set times, in a repeating pattern on selected weekdays.

How to set up a scheduled event

This example describes how to set the AXIS 213 to send an email notification with saved images from a set time:

1. Click **Add scheduled** on the **Event types** page.
2. Enter a descriptive **name** for the event, e.g. Scheduled email.
3. Set the **Priority** (High, Normal or Low).
4. Set the **Activation Time** parameters (24h clock) when the event is to be active, e.g. start on Fridays at 18.00 with a duration of 62 hours.
5. Set the **When Activated...** parameters i.e. set what the AXIS 213 is to do at the specified time e.g. send uploaded images to an email address.
6. Click **OK** to save the Event in the Event Types list.

Please use the online help files for descriptions of each available option.

Port Status

Under **Event Configuration > Port Status** there is a list that shows the status for the connected inputs and outputs of the AXIS 213 for the benefit of the Operator who cannot access the System Options section.

Example: If the Normal state for a push button connected to an input is set to **Open circuit –** as long as the button is not pushed, the state is **inactive**. If the button is pushed, the state of the input changes to **active**.

System Options

Security

User access control is enabled by default, the administrator sets the root password on first access. Other users are authorized with user names and passwords, or the administrator can choose to allow anonymous viewer login to the Live View page, as described below:

Users - the **user list** displays the authorized users and access levels:

Viewer	Provides the lowest level of access, which only allows the user access to the Live View page
Operator	An Operator can view the Live View page, create and modify event types and adjust certain other settings. The Operator does not have access to the Systems Options configuration pages.
Administrator	An administrator has unrestricted access to the Setup Tools and can determine the registration of all other users.

User Settings - check the corresponding checkboxes to enable:

- **Anonymous viewer login** - allows any viewer direct access to the Live View page.
- **Anonymous PTZ control login** - allows any viewer access to the Pan/Tilt/Zoom controls on the Live View page.

IP Address Filter - The administrator can add up to 256 IP address ranges or single IP addresses to the **Allowed IP Addresses** list. If the IP address filtering checkbox is checked, the AXIS 213 will only allow access to requests coming from the IP addresses in the list.

See the IP address filtering help files for information on how to add IP address ranges.

The users from these IP addresses need to be specified in the user list with the appropriate access rights (**User**, **Operator** or **Administrator**).

Referrals - to prevent unauthorized sources from including the video stream from the AXIS 213 into external Web pages, check the **Referrals** checkbox and enter the IP address or Host name of the computer that hosts the Web pages with the included video stream. Several IP addresses/host names can be defined and are separated by semicolons(;)

Date & Time

Current Server Time - displays the current date and time (24h clock). If this has not been configured, the time displayed is the default setting. The time can be displayed in 12h clock format in the Overlay Images (see below).

New Server Time - Select your time zone from the drop-down list and check the daylight saving time changes, if desired.

From the **Time Mode** section, select the preferred method to use for setting the time:

- **Synchronize with computer time** - sets the time from the clock on your computer.
- **Synchronize with NTP Server** - the AXIS 213 will obtain the time from an NTP server every 60 minutes. Specify the **NTP server**'s IP address or host name. Note that if using a host name for the NTP server, a DNS server must be configured under **TCP/IP** settings. See **Network > TCP/IP** below.
- **Set manually** - this option allows you to manually set the time and date.

Date & Time Format Used in Images - specify the formats for the date and time (12h or 24h) displayed in the Live View video streams.

Use the predefined formats or use your own custom date and time formats. See **Advanced File Naming & Date/Time Formats** in the help files for information on how to create your own file formats.

Network - TCP/IP Settings

IP Address Configuration - the IP address of the AXIS 213 can be set automatically via DHCP, or a fixed IP address can be set manually. A host name can be used and there are options for setting up notification of changes in the IP address. DHCP is enabled by default.

Note: Automatic IP address assignment via DHCP may lead to the situation where the IP address is changed and you lose contact. Configure the **options for notification of IP address change** (under **Services**) to receive notification from the AXIS 213, when the IP address has been changed.

Alternatively, if your DHCP server can update a **DNS server,** you can access the AXIS 213 by host name which is always the same, regardless of the IP address.

Auto-Configure Link-Local Address is enabled by default and assigns the AXIS 213 with an additional IP address for the UPnP protocol. The AXIS 213 can have both a Link-Local IP and a static/DHCP IP address at the same time - these will not affect each other. See *Network - UPnP*, on page 44.

DNS Configuration - DNS (Domain Name Service) provides the translation of host names to IP addresses on your network.

Obtain DNS server address via DHCP - automatically use the DNS server settings provided by the DHCP server. Click the **View** button to see the current settings.

Use the following DNS server address - enter the desired DNS server by specifying the following:

- **Domain name** - enter the domain(s) to search for the host name used by the AXIS 213. Multiple domains can be separated by semicolons (;). The host name is always the first part of a Fully Qualified Domain Name, e.g. **myserver** is the host name in the Fully Qualified Domain Name **myserver.mycompany.com** where mycompany.com is the Domain name.
- **Primary DNS server** - enter the IP address of the primary DNS server.
- **Secondary DNS server** - will be used if the primary DNS server is unavailable.

Host Name Configuration - The AXIS 213 can be accessed using a host name, instead of an IP address. The host name is usually the same as the assigned DNS Name. It is always the first part of a Fully Qualified Domain Name and is always one word, with no period. For example, **myserver** is the host name in the Fully Qualified Domain Name myserver.mycompany.com.

The enable dynamic DNS updates allows you to alias a dynamic IP address to a static host name, allowing your computer to be more easily accessed from various locations on the Internet. Outside users can always access your server using the associated DNS name regardless of the WAN IP. The DNS server used by the user and/or the DNS server responsible for the domain in use must support RFC2136 and allow updates from the camera.

The **TTL** (Time To Live) value determines how long (in seconds) the reply from the DNS server should be remembered when checking that the domain name for the registered IP address is still valid.

For more information, please refer to the online help files

Services

Options for notification of IP address change - if the IP Address for the AXIS 213 is changed automatically, e.g. by DHCP, you can choose to be notified. Click **Settings...** and enter the required information.

AXIS Internet Dynamic DNS Service - If the AXIS 213 has been registered with the Axis Internet Dynamic DNS service and the IP address for the product changes, the service is updated to reflect the change. Check the box to enable/disable automatic updates.

The domain name currently registered at the Axis Internet Dynamic DNS service for your product can at any time be removed. To do this click **Settings...** and follow the instructions.

For more information, please refer to the online help files

HTTP

The default HTTP port number **(port 80)** can be changed to any port within the range 1024-65535. This is useful for e.g. simple security port mapping.

Network Traffic

The default setting is **Auto-negotiate** which means that the correct speed is automatically selected. If necessary, you can set the connection speed by selecting it from the drop-down list. 10BaseT (Half/Full Duplex), 100BaseTX (Half/Full Duplex).

Maximum bandwidth - Specify, in Mbit/s or Kbit/s, the maximum bandwidth that the AXIS 213 is allowed to use on your network. This is a useful function when connecting the AXIS 213 to busy or heavily loaded networks. The default setting is **Unlimited**.

For more information, please refer to the online help files

Network - SOCKS

SOCKS is a networking proxy protocol. The AXIS 213 can be configured to use a SOCKS server to reach networks on the other side of a firewall/proxy server. This functionality is useful if the AXIS 213 is located on a local network behind a firewall, but notifications, uploads, alarms, etc., need to be sent to a destination outside the local network (e.g. to the Internet).

Network - SMTP (email)

(Simple Mail Transfer Protocol) Enter the host names or addresses for your primary and secondary mail servers in the fields provided to enable event and error email messages from the AXIS 213 to predefined addresses, via SMTP.

Network - UPnP

The AXIS 213 includes support for UPnP in Windows Millennium and Windows XP. UPnP is enabled by default.

Note: UPnP must be installed on your workstation. To do this, open the Control Panel from the **Start Menu** and select **Add/Remove Programs**. Select **Add/Remove Windows Components** and open the **Networking Services** section. Click **Details** and then select **UPnP** as the service to add.

RTP (multicast)

Multicast must be enabled for these settings to take effect. The settings are only valid when MPEG-4 is used as the video format. Enter the IP address and the port number to use for the video stream in the required fields.

Only IP addresses within certain ranges can be used for multicasting. The camera has been pre-configured with an address from these ranges, and this does not normally need to be changed. Please contact your network administrator if you have special requirements.

Notes:
- Viewers do not need to know this IP address or port number, but simply the main IP address or host name otherwise used for accessing the camera.
- Setting the video port number to 0 means a random port number will be used.

If IP packets (i.e. data) fail to be delivered to their destination within a reasonable length of time the number entered in the Time to live field tells the network routers when to discard the packet. The value is usually measured in 'hops', i.e. the number of network routers that can be passed before the packet arrives at its destination or is dropped.

Ports & Devices - I/O Ports

The pinout, interface support and the control and monitoring functions are described in the section on the *Connection Module*, on page 48.

LED Settings

When the LED on the front of the AXIS 213 is **Enabled**, the LED will remain lit when the AXIS 213 is on and flash when there is any network activity. If **Disabled**, the LED will remain off, except when there is a hardware problem and the LED will flash red.

Maintenance

- **Restart** - The unit is restarted without changing any of the settings. Use this method if the unit is not behaving as expected.
- **Restore** - The unit is restarted and most current settings are reset to factory default values. The settings that will not be reset are as follows:
  - the boot protocol (DHCP or static)
  - the static IP address
  - the default router
  - the subnet mask
  - the system time
- **Default** - The Factory default button should be used with caution. Pressing this button will reset all of the AXIS 213's settings to the factory default values (including the IP address)

Upgrade Server - See *Updating the Firmware*, on page 50.

Backup - click the **Backup** button to take a backup of all of the parameters, and any user-defined scripts. If necessary, it is then possible to return to the previous settings if the settings are changed and there is unexpected behavior.

Note: The root password will also be reset to the password saved in the backup file.

Restore - click the **Browse** button to locate the saved backup file (see above) and then click the **Restore** button. The settings will be restored to the previous configuration.

Note: **Backup** and **Restore** can only be used on the same unit running the same firmware. This feature is not intended for multi-configurations or for firmware upgrades.

Support

The **support overview** page provides valuable information on troubleshooting and contact information, should you require technical assistance.

Logs & Reports - when contacting Axis support, please be sure to provide a valid Server Report with your query.

View Information - The **Log** report and the **Parameter List** also provide valuable information for troubleshooting and when contacting Axis' support service.

Configuration

- **Log Level for Log Files** - from the drop-down list, select the level of information to be added to the Log file
- **Log Level for Email** - from the drop-down list, select the level of information to send as email and enter the destination email address.

Advanced

Scripting is an advanced function that provides the possibility to customize and use scripts. This function is a very powerful tool.

Caution!
Improper use may cause unexpected behavior or even cause loss of contact with the unit. If a script does cause problems, reset the unit to its factory default settings. A backup file may be of use to return the unit to its latest configuration.

Axis strongly recommends that you do not use this function unless you fully understand the consequences. Note that Axis support does not provide assistance for problems with customized scripts.

For more information, please visit the Developer pages at www.axis.com/developer

Plain Config - this function is for the advanced user with experience of Axis network camera configuration. All parameters can be set and modified from this page. Help is available from the standard help pages.

Resetting to Factory Default Settings

To reset the AXIS 213 to the original default settings, go to the **System Options > Maintenance** web page (described in *Maintenance*, on page 45) **or** use the Reset button on the **AXIS 213** as described below:

Using the Reset Button

Follow the instructions below to reset the AXIS 213 to factory default settings using the Reset Button.

1. Switch off the AXIS 213 by disconnecting the external power supply.
2. Using a suitably pointed object, press and hold the Reset button while you reconnect the power connector.
3. Keep the Reset button pressed for approximately 15 seconds.
4. Release the Reset button.

Note: Resetting to the factory default settings using the Reset Button will cause all parameters (including the IP address) to be reset. Refer to *Maintenance*, on page 45 for other methods that do not reset the IP address.

Connection Module

The connection module connects to the camera and is configured and controlled via the camera's user interface. The Connection module is an optional accessory providing the following:

- audio in / out
- 3 relay outputs
- 2 digital inputs
- video in / out
- RS-232C Serial port

Installing the audio equipment

1. Connect a microphone (not supplied) to the **Audio IN** socket.
2. Connect a loudspeaker (not supplied) to the **Audio OUT** socket (amplified speakers only).

I/O inputs and outputs

The I/O inputs / outputs are used in applications for, e.g. event triggering, time lapse recording, alarm notification via email, picture storage to FTP locations.

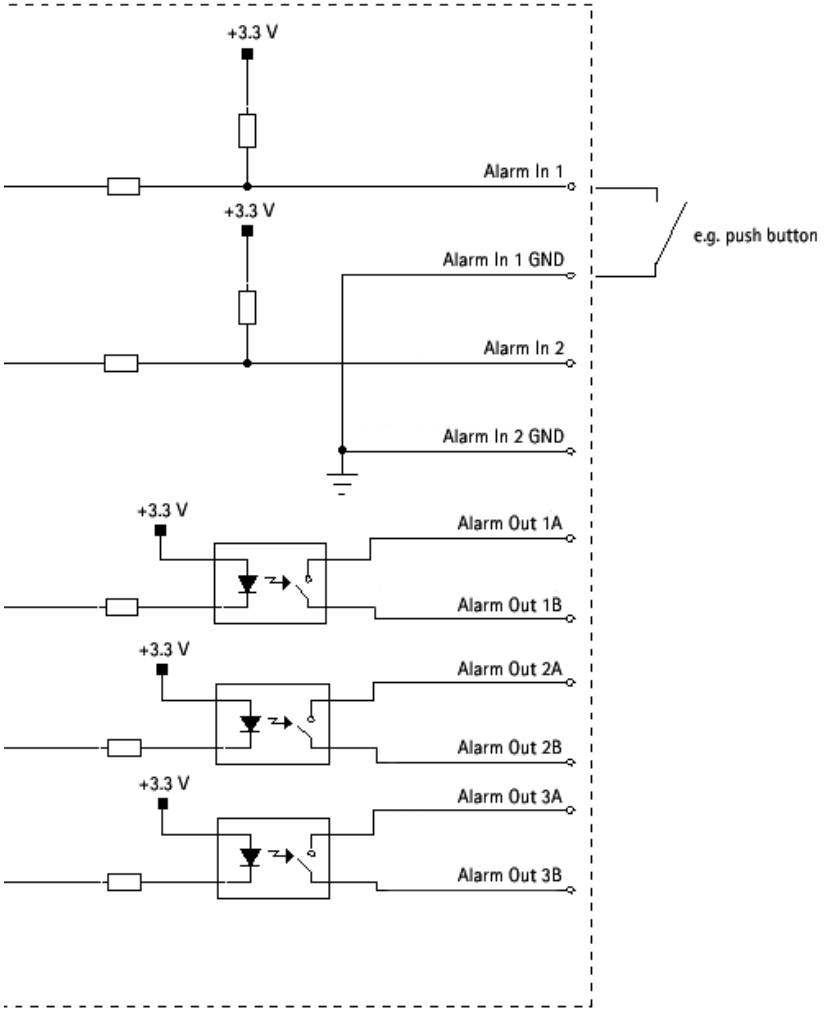
- **Input** - e.g. a doorbell. If the doorbell is pressed, the **state** changes, and the input will be active (shown under **Event Configuration > Port Status**).
- **Output** - e.g. an alarm device that can be activated from Output buttons on the **Live View** page, or as an action for an **Event Type**. The output will show as **active** (under **Event Configuration > Port Status**) if the alarm device is activated.

I/O	Description
Alarm In 1,2 Alarm GND	Connect to GND to activate or leave floating (unconnected) to deactivate
Alarm Out 1A,1B;2A,2B;3A,3B	Active output, electrical connection between A and B. Non active output, no connection between A and B. Imax=100mA, VMax=24V

Video Out

Via a standard BNC connector, this output allows the AXIS 213 to be connected directly to traditional CCTV systems.
Video In and **RS-232C** can be configured under Plain config for use in advanced applications (see **System Options > Advanced > Plain Config**). Intended for advanced users only.

Schematic Diagram - Connection Module



Troubleshooting

Checking the Firmware

The firmware is software that determines the functionality of the AXIS 213. When you download firmware from the Axis Web site, your Axis product will receive the latest available functionality.

One of your first actions when troubleshooting a problem should be to check the currently installed firmware version. The latest version may contain a correction that fixes your particular problem. The current software version in your AXIS 213 is available under **Setup > Basic Configuration.**

Updating the Firmware

New firmware can be downloaded to the AXIS 213 over the network. Always read the upgrade instructions available with each new release, before updating the firmware.

1. Save the firmware file to your computer. The latest version of the AXIS 213 firmware is available free of charge from the Axis Web site at **http://www.axis.com/techsup** or from your local distributor.
2. Go to **Setup > System Options > Maintenance** in the AXIS 213 Web pages.
3. In the **Upgrade Server** section and browse to the firmware file on your computer. Click **Upgrade**.
4. Wait at least 20 minutes before restarting the AXIS 213 after upgrading.

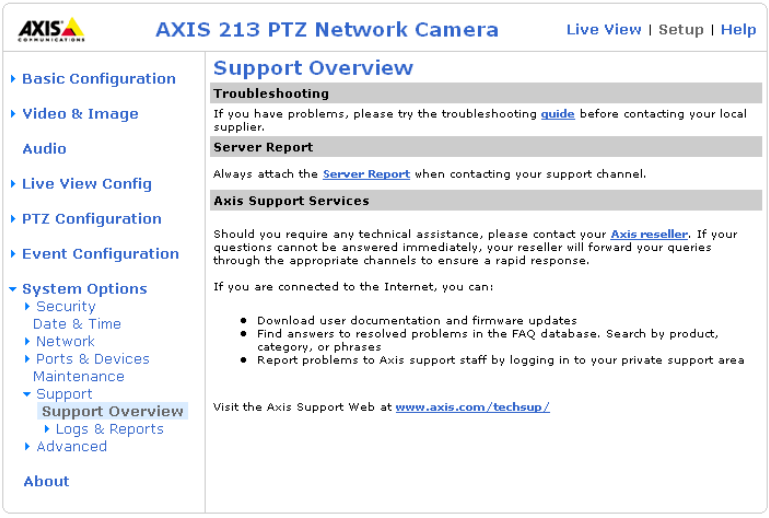
Notes:
- Pre-configured and customized settings will be retained for use when the new firmware is running (providing that the features are available in the new firmware) although this is not guaranteed by Axis Communications.
- After starting the process, you should always wait at least 20 minutes before restarting the AXIS 213, even if you suspect the procedure has failed.
- Your dealer reserves the right to charge for any repair attributable to faulty updating by the user.

Support

If you contact the Axis support desk, please help us help you resolve your problems expediently by providing a server report, log file and a brief description of the problem.

Server Report - go to **Setup > System Options > Support Overview**. The server report contains important information about the server and its software, as well as a list of the current parameters.

Log file - go to **Setup > System Options > Logs & Reports**. The Log file records events within the unit since the last restart of the system and can prove a useful diagnostic tool for troubleshooting.


AXIS 213 PTZ Network Camera
Live View | Setup | Help
Basic Configuration
Video & Image
Audio
Live View Config
PTZ Configuration
Event Configuration
System Options
Security
Date & Time
Network
Ports & Devices
Maintenance
Support
Support Overview
Logs & Reports
Advanced
About
Support Overview
Troubleshooting
If you have problems, please try the troubleshooting guide before contacting your local supplier.
Server Report
Always attach the Server Report when contacting your support channel.
Axis Support Services
Should you require any technical assistance, please contact your Axis reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response.
If you are connected to the Internet, you can:
Download user documentation and firmware updates
Find answers to resolved problems in the FAQ database. Search by product, category, or phrases
Report problems to Axis support staff by logging in to your private support area
Visit the Axis Support Web at www.axis.com/techsup/

Symptoms, Possible Causes and Remedial Actions

Problems setting the IP address

Using ARP Ping	The IP address must be set within two minutes after the power has been applied to the AXIS 213, restart the server and try again. Also, make sure the ping length is set to 408.
The AXIS 213 is located on a different subnet	If the IP address intended for the AXIS 213 and the IP address of your computer are located on different subnets, you will not be able to set the IP address. Contact your network administrator for an IP address on the same subnet as the computer you are performing the installation from.
The IP address is being used by another device	**Disconnect power from the AXIS 213**. Run the Ping command (in a Command/DOS window, type **ping** and the **IP address** of the unit). If you receive: **Reply from <IP address>: bytes = 32; time = 10 ms.....** - this means that the IP address may already be in use by another device on your network. You must obtain a new IP address and reinstall the unit. If you receive: **Request timed out** - this means that the IP address is available for use with your AXIS 213. In this case, check all cabling and reinstall the unit.

The AXIS 213 cannot be accessed from a browser

The IP address has been changed by DHCP	1) Move the AXIS 213 to an isolated network or to one with no DHCP or BOOTP server. Set the IP address again, using the ARP Ping command. 2) Access the unit and disable BOOTP and DHCP in the TCP/IP settings. Return the unit to the main network. The unit now has a fixed IP address that will not change. 3) As an alternative to 2), if dynamic IP address via DHCP or BOOTP is required, select the required service and then configure IP address change notification from the network settings. Return the unit to the main network. The unit will now have a dynamic IP address, but will notify you if the address changes.
Other networking problems	Test the network cable by connecting it to another network device, then Ping that device from your workstation.

Cannot send notifications, uploads, alarms, etc, to a destination outside the local network.

Firewall protection	The AXIS 213 can be configured to use a SOCKS server to reach networks on the other side of a firewall/proxy server.

Your AXIS 213 is accessible locally, but not externally

Firewall protection	Check the Internet firewall with your system administrator.
Default routers required	Check if you need to configure the default router settings.
The Internet site is too heavily loaded	Use a script running on your web server to relay images from the AXIS 213 to the Internet.

A firmware upgrade has been interrupted or the firmware has in some other way been damaged	A rescue firmware is running in the product. First, set the IP address using AXIS IP utility or ARP and Ping, Then, from a Web browser, access the unit and download the latest firmware to the product, see *Updating the Firmware*, on page 50.

Problems with the MPEG-4 format

No MPEG-4 displayed in the client.	Check that the correct network interface is selected in the AMC control panel applet (network tab).
	Check that the relevant MPEG-4 connection methods are enabled in the AMC control panel applet (network tab).
	In the AMC control applet, select the MPEG-4 tab and click the button Set to default MPEG-4 decoder.
No multicast MPEG-4 displayed in the client.	Check with your network administrator that the multicast addresses used by the AXIS 213 are valid for your network.
	Check with your network administrator to see if there is a firewall preventing viewing.
Multicast MPEG-4 only accessible by local clients.	Check if your router supports multicasting, or if the router settings between the client and the server need to be configured. The TTL (Time To Live) value may need to be increased.
Poor rendering of MPEG-4 images	Color depth set incorrectly on clients. Set to 16-bit or 32-bit color.
	If text overlays are blurred, or if there are other rendering problems, you may need to enable Advanced Video Rendering from the MPEG-4 tab in the AMC control panel applet.
	Ensure that your graphics card is using the latest device driver. The latest drivers can usually be downloaded from the manufacturer's web site.
Color saturation is different in MPEG-4 and Motion JPEG.	Modify the settings for your graphics adapter. Please see the adapter's documentation for more information.
Lower frame rate than expected.	Reduce number of applications running on the client computer.
	Check with the system administrator that there is enough bandwidth available. See also the online help.
	Check in the AMC control panel applet (MPEG-4 tab) that video processing is not set to **Decode only I frames**.
	Lower the image resolution.
Image degeneration.	Decrease the GOV length, see the online help for more information.

No images displayed in the Web interface

Problem with AMC (*Internet Explorer only*)	To enable the updating of images in Microsoft Internet Explorer, set your Web browser to allow ActiveX controls. Also, make sure that AXIS Media Control (AMC) component is installed on your workstation.
Installation of additional ActiveX component restricted or prohibited	Configure your AXIS 213 to use a Java applet for updating the images under Live View Config > Layout > Default Viewer for Internet Explorer. See help files for more information.

Video Image Problems

Image too dark or too light	See the help on Video & Image Settings.
Problems uploading own files	There is only limited space available for the upload of your own files. Try deleting one or more existing files, to free up space.
Missing images in uploads	This can occur when trying to use a larger image buffer than is actually available. Try lowering the frame rate or the upload period.
Slow image update	Configuring, e.g. pre-buffers, hi-res images, high frame rate etc will reduce the performance of the AXIS 213.
Slow performance	Slow performance may be caused by e.g. heavy network traffic, many users with access to unit, low performing client, use of features such as Event handling., Image rotation.

Bad snapshot images

Display incorrectly configured on your workstation	In Display Properties, configure your display to show at least 65000 colors, i.e. at least 16-bit. Using only 16 or 256 colors on your display will produce dithering artifacts in the image.

Audio problems

No audio	Check that: • PC sound card, speakers and microphone are correctly connected • the Mute button is not pressed • the volume in and volume out settings are correct • all cabling is connected • the value of the Post Content Length in your proxy server is 1MB or more. You may need to contact your system administrator to do this.
No full-duplex function	Incorrect configuration. Check the setting in the camera's Setup pages. Sound card does not support full-duplex. For information on how to check if your sound card supports full-duplex, please visit www.axis.com and see the support section for Axis camera products.
Poor performance	Too many users/clients connected. Try limiting the number of clients allowed to connect. Low bandwidth. Reduce the Speed setting on the Audio settings page. Setting lower speed will reduce any break-up in the sound, but will also increase the transmission delay. If running in Full-Duplex mode, try switching to Half-Duplex mode.
Whining or screeching sound from speakers (feedback)	Poor positioning of speakers and/or microphone. Relocate the speakers or microphone so that they do not point towards each other, and/or lower the volume.

For additional assistance, please contact your reseller or check the product's support pages on the Axis Website at http://www.axis.com/techsup

Technical Specifications

Detail	Specification	
System Requirements	Standard Internet TCP/IP suite of protocols:	Windows, Linux, UNIX, Mac. etc.
Supported Web Browsers	Windows - Microsoft Internet Explorer 5.x or later and Mozilla 1.4 or later Linux - Mozilla 1.4 or later. Mac OSX - Netscape 7.x or later or Mozilla 1.4 or later.	
Audio	Windows - Microsoft Internet Explorer 5.x or later.	
Installation	Physical network connection using RJ-45 twisted pair cable. External connection module for audio, video and I/O connectors (optional).	
Management	Remote configuration and status using Web-based tools.	
Compression	Motion-JPEG. Snapshot JPEG images available. User-controlled compression level. MPEG-4. User controlled profile.	
Video Features	Time stamp, text overlay, image overlay, image rotation Color control (B/W or color).	
Networking	10baseT Ethernet or 100baseTX Fast Ethernet, TCP/IP, HTTP, FTP, SMTP, NTP, ARP, BOOTP, DNS, UPnP, SOCKS v.4.0/v.5.0.	
General I/O	2 digital inputs and 3 relay outputs (max 24V, 0.1 A) available on the connection module (optional accessory).	
Pre/Post Alarm Buffer	Memory available for pre/post alarm image storage:	up to 6MB
Security	Multi-user password protection, IP address filtering	
Operating Conditions:	Temp: 0ºC (32ºF) to 40ºC (104ºF), Humidity: 20-80% RHG.	
Approvals EMC	EN55022:1998 Class B EN55024:1998/A1:2001 EN61000-3-2:2000 EN61000-3-3:1995/A1:2001	FCC Part 15, Subpart B, Class B Canada ICES-003 Class B VCCI, Class B C-Tick, AS/NZS 3548
Approvals - Safety	EN 60950, UL, CSA, AS, SISIR, FIMKO (AC Adapter)	
Metrics	Height: min/max 4.33"/5.12" (110/130mm) Width: 4.09" (104mm).	Weight: 1.55 lb. (700g), excluding power supply & connection module.
Hardware	ARTPEC-2 compression chip ETRAX-100 LX (32-bit RISC, 100MIPS CPU). 32 MB RAM, 4 MB FLASH	
Optics	Lens type:	26x optical zoom 12x digital zoom
	Lens:	3.5 MM. – 91 MM., F1.6 – F4.0
	Focus region:	Wide: 0.01 m to ∞ Tele: 1.6 m to ∞, Auto/ Manual
	Horizontal angle of view:	42° (Wide) - 1.7° (Telephoto)

Detail	Specification	
Image	Image Chip (CCD):	¼" Interlaced CCD
	Total number of pixels:	NTSC - 340,000 effective pixels PAL - 400,000 effective pixels
	Horizontal Resolution:	NTSC - 460 TV lines PAL - 420 TV lines
	Vertical Resolution:	350 TV lines
	S/N Ratio:	48 dB
	Shutter speed:	NTSC- 1/80,000 to 1/60 to 1/1sec. PAL- 1/80,000 to 1/50 to 1/1 sec.
	White balance:	Auto / manual / Hold current
	Digital video resolutions:	PAL - 768x576 at up to 25 fps NTSC - 704x480 at up to 30 fps
Mechanisms	Minimum illumination:	1 lux (at 1/30 s) in normal mode and no light at all in IR mode with integrated IR lighting.
	Night mode Infrared lighting:	LEDs (4) Effective lighting range: 3 m (9.8 ft.)
	Infrared cut filter:	Power-driven insertion/removal (normal mode/night mode)
	Pan:	340 degrees
	Tilt:	+10/-90 degrees (ceiling mount) +90/-10 degrees (desktop)
	Rotation speed:	Pan: 1 to 90°/s, Tilt: 1 to 70°/s
	Preset positions:	20 preset positions
	Lens filter mount:	diameter: 37 mm pitch: 0.75 mm
Power	External power supply included:	In: 230/110V AC 50/60Hz Out: 13V DC 1.8A
Complimentary Software	AXIS Media Control (AMC) - ActiveX component software required for Microsoft Internet Explorer, installed automatically on first use.	Optional: AXIS IP Utility - Windows installation. Available from http://www.axis.com
MPEG-4 license	License for one MPEG-4 encoder and one MPEG-4 decoder is included.	Additional licenses can be bought separately from Axis Communications.
Axis Chipset Technology	Axis renowned chipset technology is built upon an open architecture that is streamlined to provide device connectivity, independent of any file server. AXIS 213 is driven by a powerful AXIS ETRAX 32-bit RISC processor and includes the AXIS ARTPEC-2 which is a dedicated digital video surveillance compression chip.	

Detail	Specification
Connection Module (optional accessory)	Full-duplex audio. Audio data encoded in: • ADPCM format at 32kbps, 8 kHz sampling (G.726) • ADPCM format at 24kbps, 8 kHz sampling (G.726) • PCM μ -law format at 64kbps, 8kHz sampling (G.711) Data sent using HTTP. Microphone Input - 1-40mVpp. PC type. Line Out - Unbalanced, max. 2.6Vpp. Maximum number of users (audio) - 10 (on local area network). RS-232C - 9-pin D-SUB serial connector. Composite video in/out. 2 digital inputs and 3 relay outputs (max 24V, 0.1 A) Metrics - Height: 0.9" (23mm), Width: 2.64" (67mm), Length: 5.08" (129mm).

The AXIS 213 delivers the following file sizes (PAL):

PAL			PAL aspect ratio corrected		
	Resolution	Min-Max (KB)		Resolution	Min-Max (KB)
4CIF	704x576	10 - 300	4CIF	768x576	11 - 330
2CIF expanded	704x576	10 - 250	2CIF expanded	768x576	11 - 270
2CIF	704x288	5 - 150	2CIF	768x288	5.5 - 160
CIF	352x288	2.5 - 80	CIF	384x288	2.7 - 90
QCIF	176x144	1 - 20	QCIF	192x144	1.1 - 22

The AXIS 213 delivers the following file sizes (NTSC):

NTSC			NTSC aspect ratio corrected		
	Resolution	Min-Max (KB)		Resolution	Min-Max (KB)
4CIF	704x480	8 - 250	4CIF	640x480	7 - 230
2CIF expanded	704x480	8 - 200	2CIF expanded	640x480	7 - 180
2CIF	704x240	4 - 125	2CIF	640x240	3.5 - 110
CIF	352x240	2 - 70	CIF	320x240	1.8 - 60
QCIF	176x120	0.8 - 15	QCIF	160x120	0.7 - 14

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